

PhD Program in
“Computational Mechanics and Advanced Materials”
managed by
Prof. Franco Brezzi, IUSS, and Prof. Ferdinando Auricchio, University of Pavia

We are looking for PhD students interested in participating in a biomechanical research project.

Position 1: PhD in Computational Biomechanics

The successful candidate would be expected to have skills, or be willing to develop, in some of the following areas:

- mathematical modeling in the biomechanical context;
- numerical simulation of the structural and fluid dynamics and fluid-structure interaction;
- fluid-structure interaction analysis with in-house and/or commercial numerical codes;
- processing medical images and integrating them into mathematical models;
- interacting with cardiosurgery experts and providing the interface between the medical specialists and the members of the team responsible for the engineering and mathematical aspects.

Position 2: PhD in Constitutive Modeling

The successful candidate would be expected to have skills, or be willing to develop, in some of the following areas:

- computational mechanics;
- constitutive models of materials, including shape memory alloys (SMA) and innovative materials;
- development of in-house numerical codes (knowledge of at least two of MATLAB, FORTRAN, C++).

Position 3: PhD in Advanced Computational Mechanics

The successful candidate would be expected to have skills, or be willing to develop, in some of the following areas:

- FEM and XFEM;
- immersed boundary methods;
- isogeometric analysis,

all to be used to simulate the dynamics of biomechanical systems and fluid-structure interaction.

For all positions, the successful candidates are expected to have a high level of motivation, sound academic accomplishments and ability to learn and work independently. It is also expected that the successful candidates will have an active role in disseminating the outcomes of the project including presenting at conferences and publishing scientific papers.

The program is three years in duration.

Two positions are offered jointly by the Institute for the Advanced Study (IUSS) and the University of Pavia, both located in Pavia, Italy and covered by scholarships, according to Italian PhD rules, but up to two self-funded candidates will also be considered.

The deadline for the submission of the application is June 30, 2010. The website of the PhD Program will be soon available at the link: www.unipv.it/compmech/phd_home.html.

For further information please send an email to the following address: phd.compmech@iusspavia.it.